

**R E M A R K S**

Claims 7-22 are pending and stand ready for further action on the merits. Claims 1-6 have been canceled. Claims 13-17 have been withdrawn from consideration as being drawn to nonelected subject matter. Claims 18-22 have been added.

Support for the amendment to claims 7-9 can be found in claims 1 and 2.

Claim 11 has been amended to also depend from claims 18 and 19.

Claim 12 has been amended to recite the swelling ratio of claim 1 and to recite an immersing step, which was originally presented in claim 5.

Support for new claims 18 and 19 can be found in claims 1, 2 and 9.

Support for new claim 20 can be found in claim 3.

Support for new claims 21 and 22 can be found on page 12, lines 23-31.

No new matter has been added by way of the above amendment.

The following sections correspond to the sections in the outstanding Office Action.

***Election/Restrictions***

Applicants note with appreciation that the Examiner has rejoined Group II with Group I. Accordingly, the Examiner has considered all of claims 1-12.

***Specification***

The Examiner objects to claim 12 under 37 C.F.R., 1.75(c) for depending from two groups of claims. In response, Applicants have amended claim 12 to depend from a single group of claims, that is, claims 7-10. Accordingly, withdrawal of the objection is respectfully requested.

***Issues under 35 U.S.C. 103***

Claims 1-11<sup>1</sup> are rejected under 35 U.S.C. 103(a) as being unpatentable over Venugopal et al. (U.S. Patent 5,558,959). Applicants respectfully traverse the rejection.

***Independent Claims 7 and 8:***

In claims 7 and 8, the non-aqueous electrolyte batteries are characterized as having a positive and/or negative electrode

---

<sup>1</sup> In the December 19, 2003 Office Action, the Examiner indicated that the claims "1-1" are rejected. During a telephone conversation between Applicants' representative and the Examiner on January 20, 2004, the Examiner verified that she intended to indicate that claims 1-11 are rejected. Applicants will proceed based upon this information obtained during the January 20, 2004 telephone conversation.

binder composition containing the thermoplastic resin having a swelling ratio in a range of 150 to 800% and contains alkylene ester units of formula (1). This resin has excellent properties not seen in the resins of Venugopal et al., such as ionic conductivity at ambient and low temperatures which makes it possible to lower the internal resistance and to improve the low temperature capability and the discharge load characteristic.

A relevant passage of Venugopal et al. is as follows:

"More particularly, a polyurethane/liquid electrolyte system (40) in accordance with the instant invention may be mixed with cathode powders such as lithium manganese oxide, lithium nickel oxide or lithium cobalt oxide to form composite cathodes. Cathodes made in this fashion are essential for batteries which use polymer-based electrolytes since intimate contact between the active electrolyte material and the cathode cannot otherwise be achieved. It may further be appreciated that polyurethane liquid electrolyte blends in accordance with the instant invention may also be used to form composite anodes and batteries where lithium cannot be used." (Column 6, lines 51-62.)

Therefore, Venugopal et al. may teach that the polyurethane/liquid electrolyte system is usable for a binder resin for an electrode composition. However, Venugopal et al. fail to teach or suggest that the polyurethane acts as a binder in the polyurethane/liquid electrolyte system. With respect to the effect of using the polyurethane, Venugopal et al. only teach that the polyurethane provides intimate contact between the active electrolyte material and the electrode as above.

In addition, Venugopal et al. describe a polyurethane based electrolyte only, and never describe a polyurethane based **binder** for an electrode composition in the exemplified embodiments. A binder must, by definition, hold things together. Since Venugopal et al. fail to teach or fairly suggest the use of the polyurethane as a binder in a battery nor the working-effect of such a battery, a *prima facie* case of obviousness cannot be said to exist.

Independent Claims 9, 18 (New) and 19 (New):

In inventive claims 9, 18 and 19, the non-aqueous electrolyte batteries are characterized by having a thermoplastic resin in the electrode binder composition containing the thermoplastic resin which has a swelling ratio in a range of 150 to 800% and contains alkylene ester units of formula (1). This resin has excellent properties not seen in the resins of Venugopal et al., such as excellent ionic conductivity, which makes it possible to lower the internal resistance, and to improve the low temperature capability and the discharge load characteristic as shown in the experiments of the present specification.

As the MPEP directs, all the claim limitations must be taught or suggested by the prior art to establish a *prima facie* case of obviousness. See MPEP § 2143.03. Inventive claim 9 (and

new claims 18 and 19) is not made obvious by Venugopal et al., since Venugopal et al. fail to teach or fairly suggest that: a) the thermoplastic resin in the electrode binder composition contains the thermoplastic resin in an amount of 1 to 20% by weight; and b) such a resin makes it possible to lower the internal resistance of a non-aqueous electrolyte battery.

Based on the foregoing, withdrawal of the rejection is respectfully requested.

#### ***Drawings***

Applicants note that this application has been filed with four (4) sheets of drawings. However, the Examiner has not acknowledged whether the drawings are acceptable. Applicants respectfully request that the Examiner indicates that the drawings are acceptable in the next communication.

#### ***Information Disclosure Statement (IDS)***

On November 17, 2003, Applicants timely filed an Information Disclosure Statement. However, the Examiner has not forwarded copies of the PTO-1449 Form indicating that the references have been considered. Applicants respectfully request a that the Examiner forwards a signed copy of the PTO-1449 Form, which was originally disclosed with the November 17, 2003 IDS, with the next communication.

Conclusion


In view of the above amendments and comments, Applicants respectfully submit that the claims are in condition for allowance. A Notice to such effect is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq. (Reg. No. 43,575) at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By   
Gerald M. Murphy, Jr., #28,977

Garth M. Dahlen, #43,575

GMM/GMD:bmp  
0171-0784P

P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000